FACTS ABOUT LEAD PAINT HAZARDS FOR PUBLIC EMPLOYEES

Division of Environmental and Occupational Health Services

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How Do I Know If I Am Working with Paint Containing Lead?

As a general rule, buildings and houses built before 1978 may contain lead based paint. An x-ray fluorescence analyzer (XRF), an on-site testing device, is used to determine the lead content of painted surfaces.

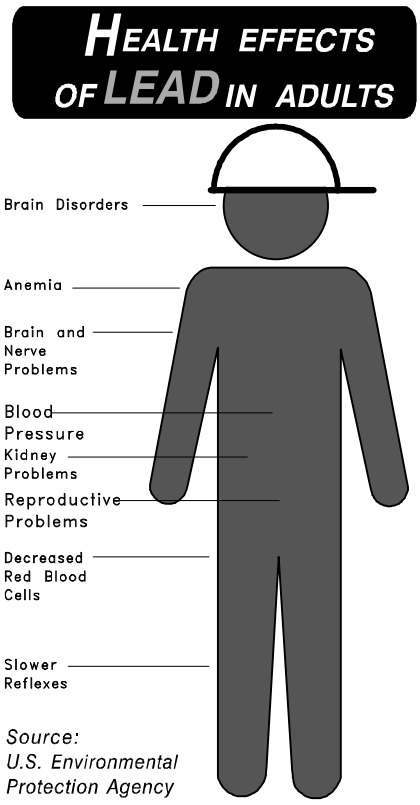
The Lead-Based Paint Poisoning Prevention Act (LBPPPA) requires that public housing authorities (PHAs) inspect all their housing projects for lead-based paint (LBP) by 1994. Under this statute, lead based paint levels equal to or greater than 1.0 milligram per square centimeter (1.0 mg/cm^2) or 0.5% by weight must be abated because the paint has a hazardous level of lead in it. The State of New Jersey mandates that 0.5% lead paint on surfaces triggers abatement.

Can I Get Sick While I Do Lead Abatement Work?

The main health hazard is from exposure to lead fumes and dust. Lead exposures occur when removing paint from surfaces that were coated with lead-containing paint, for example, during residential renovation and demolition. You can get lead poisoning by breathing in airborne lead dust or fumes or by accidentally eating lead dust. You can get lead into your body from smoking in the work area.

Regardless of how lead gets into your body, it can get into your blood. Once in your blood stream, lead circulates to all parts of the body. Some of it is passed out through the urine, while some remains stored in the liver, kidneys, nerves, red blood cells and bones.

The most common medical test for lead is the blood lead test which measures how much lead is in your bloodstream. The test results are stated in micrograms of lead per deciliter of your blood (µg/dl).



Most people with elevated blood lead levels do not have symptoms of lead poisoning. Nevertheless, elevated levels can have serious adverse effects on the body. The precise level at which health effects begin is uncertain. Health effects may be seen above 10 µg/dl in children and above 25 µg/dl in adults. The longer you have an elevated level of blood lead, the greater the risk to your health.

Levels of 40-60 µg/dl may cause muscle weakness, difficulties with mental concentration and memory, and anemia. Levels of 60-80 µg/dl can cause kidney damage and interference with normal brain function. Early symptoms of lead poisoning may be fatigue, difficulty in sleeping, stomach problems, constipation, headaches, irritability and depression. Lead exposure has also been linked to increased risk of high blood pressure, reproductive problems/sterility in both men and women, and miscarriages.

Lead can be brought from the workplace into the home on contaminated work clothing and shoes. This can result in exposure to household members, including unborn babies. Children are much more sensitive than adults to the effects of lead exposure. Mental retardation is a common effect of lead exposure in children, while brain damage and low birth weight can occur in unborn babies.

If you or a member of your family has an elevated blood lead level, it is important to see your doctor even if there are no symptoms.

Some other health hazards associated with lead abatement work include:

Carbon Monoxide (CO)

Carbon monoxide is a colorless and odorless gas. It is a product of incomplete burning and may be released from space heaters and during torch burning. Overexposure to CO may cause headaches, nausea, dizziness, weakness, rapid breathing, unconsciousness and, if the level of CO is high, death.

Sodium Hydroxide (NaOH)

Sodium hydroxide is the active ingredient in many caustic strippers used for paint removal. Effects of exposure to NaOH range from mild skin irritation to severe burns with scarring.

How Can I Safely Remove Lead Based Paint?

The methods most frequently used to remove lead-based paint include:

- Replacement
- Encapsulation (covering)
- Scraping
- Chemical paint removers (*Caution*: Some chemical strippers may contain methylene chloride which is toxic.)
- Use of electric heat guns; do not use gas-fired torches
- Sandblasting with contained vacuum recovery systems

Replacement and encapsulation are the safest methods to use. Plasterboard, wallboard, wood paneling or similar durable materials may be used to cover leaded surfaces instead of removing the paint. Plastic or metal "L" shaped moldings are available to abate such surfaces as protruding wall corners, window sills, doors and jambs. Local fire codes should be reviewed for restrictions. *Sanding should be avoided*.

You can be exposed to lead when you are doing lead abatement work which includes paint removal, clean-up, and disposal of lead debris. The most effective way to protect yourself is to lessen exposure through the use of engineering controls and good work practices.

The following safe methods will help to protect you from lead exposure:

Engineering Controls

- TURN OFF the forced-air systems (heating and air conditioning systems) and seal all intake vents and exhaust points.

- INSTALL exhaust ventilation equipped with dust collection systems to capture lead dust and fumes at the point of generation.

- SUBSTITUTE contained vacuum-blasting for open-air blasting.

- USE vacuuming equipment with high-efficiency particulate air (HEPA) filters.

Safe Work Practices

- REMOVE/REPLACE interior woodwork and window systems rather than scraping, if possible.

- KEEP the temperature of the heat gun below 700 ^{o}F to reduce lead fumes.

- INCREASE the length of the heat gun, thereby increasing the distance between the source of contamination and your breathing zone.

- WORK upwind of the heat gun. Make certain the wind is blowing away from your breathing zone.

- CLEAN UP debris as soon as possible. Some of the debris may require handling as hazardous waste under federal EPA, state and local environmental regulations.

- MIST dry debris before cleaning up.

- DO NOT dry sweep. It raises dust.

- DO NOT eat, drink, smoke or apply cosmetics in the work area.

- WASH hands and face before eating, drinking and smoking.

- STORE lunches in an uncontaminated area.

- VACUUM protective clothing with a HEPA vacuum before leaving the work area.

- TAKE a shower and change into clean clothes before going home to prevent lead exposure to family members. Use separate areas for storing clean clothing and changing from dirty work clothing in order to prevent cross-contamination.

Respirators

- OBTAIN a medical examination to determine whether you are fit to wear a respirator.

- USE NIOSH/MSHA approved respirators.

- MAKE certain that your respirator is appropriate for the job that you are doing and that it is fit tested.

- PUT ON your respirator before entering the work area and do not remove it until you have left the work area. The use of respirators should supplement the continued use of engineering controls and good work practices rather than substitute for them.

- CLEAN and disinfect respirators after each use. Remove cartridges before washing.

- CHANGE respirator filters when appropriate.

- INSPECT your respirator during and after cleaning for worn or deteriorated parts.

- DO NOT share your respirator.

- STORE your respirator in a convenient and clean location.

- USE carbon monoxide warning alarms if you are using supplied air systems.

Other Personal Protective Equipment

- USE clean, dry protective work clothing. Appropriate protective work clothing and equipment can include overalls or similar full-body work clothing, gloves, safety helmet, safety shoes and disposable shoe coverlets, face shields or vented goggles.

Hazard Communication

- READ Material Safety Data Sheets (MSDS) and labels to become familiar with the hazardous properties of lead and toxic chemicals.

- OBTAIN training on how to work safely with lead and hazardous chemicals.

What Air Lead Levels Have Been Reported for Different Types of Lead Abatement Jobs?

For the jobs listed below, the Occupational Safety and Health Administration (OSHA) reported the following average lead air levels in micrograms per cubic meter of air ($\mu g/m^3$):

■ Hand scraping of paint	45 $\mu g/m^3$
■ Using a heat gun to remove paint containing lead	26 $\mu g/m^3$
■ Using chemicals to strip paint off surfaces	11 $\mu g/m^3$
■ Encapsulating lead-based surfaces	3 $\mu g/m^3$
■ Using power tools to remove lead based paint	185 $\mu g/m^3$
■ Abrasive blasting	17,315 $\mu g/m^3$
■ Vacuum blasting	169 $\mu g/m^3$

Does the Air I Breathe Need to Be Tested for Lead?

Before a lead abatement job is started, it is important to know if there is lead in your breathing air. Consult the PEOSH Lead Exposure in Construction Interim Final Rule (29 CFR 1926.62) for guidance on how to determine airborne concentrations of lead.

Results of exposure monitoring (airborne concentrations of lead) will help you and your employer to:

- Identify sources of exposure.
- Select the appropriate respiratory protection and monitor its effectiveness.
- Determine the need for engineering controls and evaluate engineering controls in place.
- Determine the effectiveness of work practices in controlling exposures.
- Determine the need for medical monitoring.

When is it Necessary to Establish a Medical Surveillance Program?

If you are potentially exposed to lead at or above the action level (AL) of 30 $\mu g/m^3$ (micrograms per cubic meter of air), you should be monitored in a systematic medical surveillance program.

The medical surveillance program must include:

- Pre-employment, pre-placement and periodic medical examinations
- Laboratory tests for blood lead levels or zinc protoporphyrin levels
- Health education
- Recordkeeping

Treatment

- The best treatment is prevention.
- If your blood lead level is elevated, your doctor will know what to do in terms of treatment.
- Chelation therapy is a process in which a drug is used to help your body eliminate lead. Chelation therapy is not risk free and is only warranted in a small fraction of cases. Chelation therapy should not be used as a substitute for preventing lead exposures and abating lead hazards.

Lead regulations are currently undergoing many changes by federal, state and local agencies. To ensure that you obtain the latest regulatory requirements, you should contact the appropriate agencies.

Regulations are categorized into 1) *Occupational Safety and Health Regulations* and 2) *Environmental Regulations*.

Occupational Safety and Health Regulations

- The New Jersey Public Employees Occupational Safety and Health Act (PEOSH) adopts all federal OSHA standards, by reference. Public employees are protected by the provisions of 29 CFR Part 1926 Lead Exposure in Construction; Interim Final Rule. The interim final rule provides protection for workers doing lead abatement and construction work.

- The New Jersey Administrative Code (N.J.A.C. 8:57-3.2) requires that physicians report adult lead toxicity (blood lead levels > 25 micrograms per deciliter (µg/dl) or urine lead levels > 80 micrograms per liter (µg/l)) to the New Jersey Department of Health and Senior Services.

- The Bassano/Hartman Bill, S1135 (Laws of 1993, chapter 228) was passed on 12/16/93. This New Jersey law authorizes the New Jersey Department of Health and Senior Services (NJDHSS) to establish certified training agencies and programs for lead abatement contractors and workers and to issue permits to lead abatement workers. The training programs will be mandated to include occupational safety and health.

Environmental Regulations

- The Lead Based Paint Poisoning Prevention Act (LBPPPA) established guidelines and requirements applicable to housing that is owned, subsidized or subject to mortgage guarantees by the federal government.

- State of New Jersey regulations and guidelines regarding lead-based paint removal are contained in Title 8, Chapter 51 - Childhood Lead Poisoning, State Sanitary Code, (Chapter 13). These regulations are enforced by local health departments.

- The state Department of Environmental Protection enforces state and federal regulations regarding containment and disposal of hazardous waste.

Where Can I Call for Help?

Worker Safety and Health Issues, Contact:

New Jersey Department of Health and Senior Services
PEOSH Program
Occupational Disease and Injury Service
PO Box 360
Trenton NJ 08625-0360
(609) 984-1863

Your Local Health Department

Worker Training and Certification, Contact:

New Jersey Department of Health and Senior Services
Consumer and Environmental Health Service
PO Box 369
Trenton NJ 08625-0369
(609) 984-2193

Abatement Guidelines and Information, Contact:

U.S. Department of Housing and Urban Development (HUD)
Office of Lead-Based Paint and Poisoning Prevention
451 7th Street, SW B113
Washington DC 20410
(202) 755-1805

Steel Structures Painting Council (SSPC)
4516 Henry Street, Suite 301
Pittsburgh PA 15213-3728
(412) 687-1113

National Lead Abatement Council (a non-profit organization that enhances the understanding and reduction of lead hazards)
PO Box 535
Olney Maryland 20832
(301) 924-0804

Environmental Regulations, Contact:

New Jersey Department of Environmental Protection
Bureau of Advisement
Division of Environmental Regulation
PO Box 421
401 E. State Street
Trenton NJ 08625-0421
(609) 292-8341

Childhood Lead Poisoning, Contact:

National Lead Information Center Hotline
(800) LEAD-FYI (532-3394)

New Jersey Department of Health and Senior Services
Childhood Lead Program
50 E. State Street
PO Box 364
Trenton NJ 08625
(609) 292-5666

Your Local Health Department